

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P518291

Luminaire Tested: HVL8-8-LD4-3STD-40-UNV-C-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518291
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-3STD-40-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22235.0 lumens
Efficiency: N/A
Efficacy: 116.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

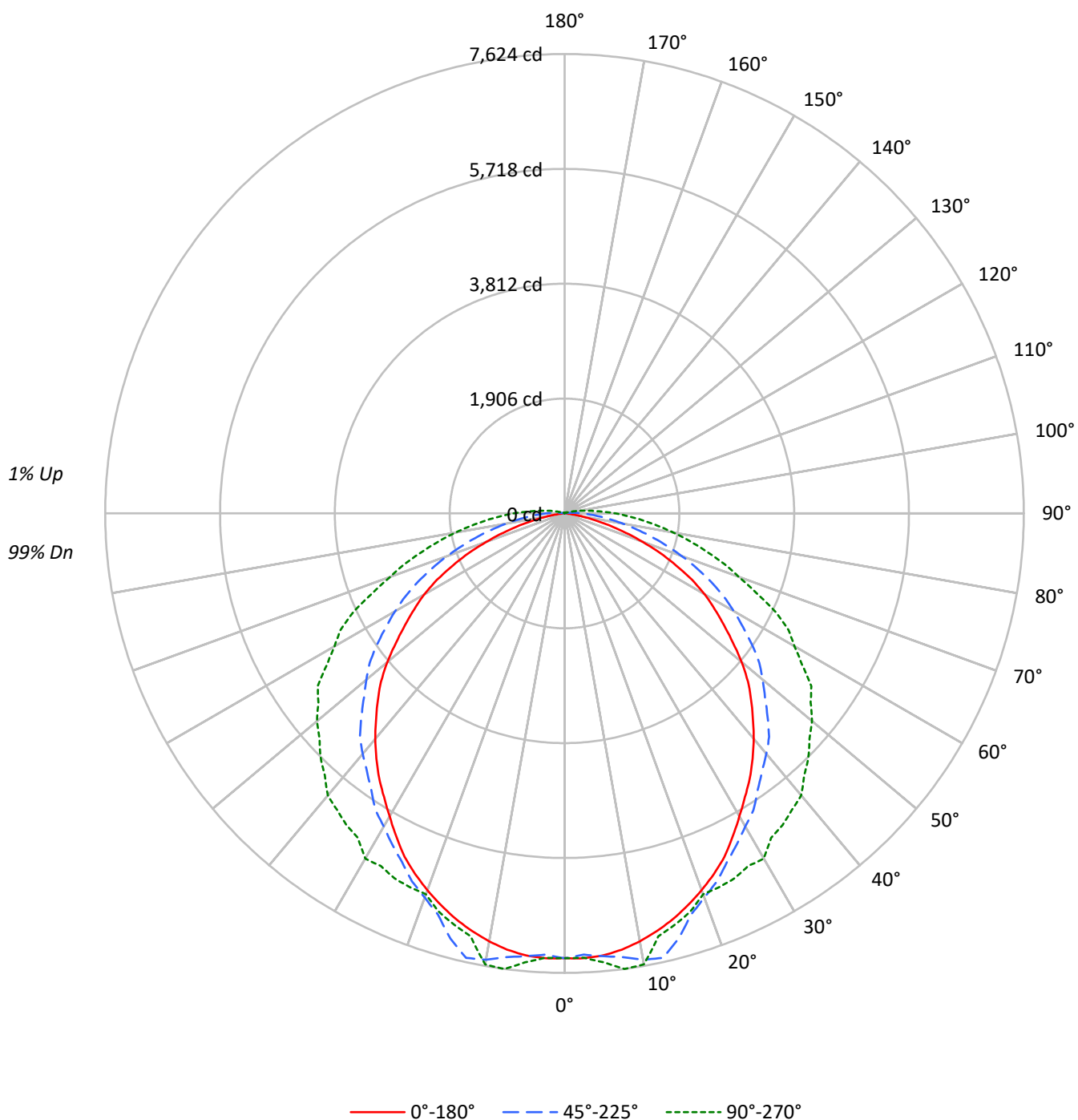
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14896	14896	14896
5°	14889	14692	14824
10°	14721	14909	14915
15°	14480	14522	13844
20°	14182	13621	13239
25°	13864	13048	13323
30°	13368	12588	13469
35°	13024	12154	13231
40°	12653	11832	13313
45°	12254	11413	13073
50°	11765	10973	12973
55°	11030	10501	12966
60°	10485	9848	12412
65°	9340	9065	12017
70°	7703	8039	10776
75°	5591	6789	9837
80°	3235	5528	8831
85°	1294	4225	7779

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13073 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	709.4	3.2
10°-20°	2020.1	9.1
20°-30°	3005.7	13.5
30°-40°	3612.9	16.2
40°-50°	3802.8	17.1
50°-60°	3528.6	15.9
60°-70°	2789.9	12.5
70°-80°	1704.2	7.7
80°-90°	742.5	3.3
90°-100°	231.1	1.0
100°-110°	51.9	0.2
110°-120°	20.9	0.1
120°-130°	11.7	0.1
130°-140°	3.2	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	5735.3	25.8
0°-40°	9348.2	42.0
0°-60°	16679.5	75.0
0°-90°	21916.1	98.6
90°-120°	304.0	1.4
90°-150°	318.8	1.4
90°-180°	319.0	1.4
0°-180°	22235.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7381	7381	7381	7381	7381	
5°	7363	7348	7373	7456	7477	698
15°	6969	7236	7307	7065	7070	1963
25°	6286	6688	6382	6573	6680	2886
35°	5363	5512	5595	6103	6310	3352
45°	4383	4402	4765	5519	5725	3378
55°	3228	3281	3801	4632	5001	2900
65°	2043	2108	2678	3544	3866	2024
75°	773	1024	1493	2294	2439	843
85°	69	241	582	1129	1296	107
90°	2	72	305	716	844	3
95°	2	18	134	392	480	1
105°	2	10	27	77	108	2
115°	2	6	21	35	36	2
125°	2	3	9	23	32	2
135°	3	3	3	8	10	1
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	7380.8	7380.8	7380.8	7380.8	7380.8
2.5°	7389.8	7370.3	7329.7	7368.8	7379.3
5°	7362.8	7347.7	7373.3	7456.0	7477.0
7.5°	7301.1	7358.3	7425.9	7576.3	7624.4
10°	7209.4	7317.7	7520.6	7648.4	7598.8
12.5°	7098.1	7281.6	7553.7	7304.1	7188.4
15°	6968.8	7236.5	7307.1	7065.1	7069.6
17.5°	6817.0	7198.9	6980.9	6974.9	6931.3
20°	6653.1	7072.6	6783.9	6771.9	6725.3
22.5°	6477.2	6905.7	6609.5	6585.4	6711.7
25°	6286.2	6687.7	6382.5	6573.4	6680.2
27.5°	6047.2	6402.0	6193.0	6463.7	6597.5
30°	5805.1	6107.3	5999.1	6376.5	6614.0
32.5°	5578.1	5799.1	5839.7	6343.4	6382.5
35°	5363.1	5511.9	5594.6	6102.8	6310.3
37.5°	5127.0	5167.6	5387.1	6002.1	6202.0
40°	4886.5	4860.9	5212.7	5836.7	6113.3
42.5°	4627.9	4618.8	5027.8	5754.0	5892.3
45°	4382.8	4402.3	4764.7	5519.4	5725.4
47.5°	4131.7	4157.3	4515.1	5262.3	5517.9
50°	3840.0	3873.1	4292.6	5033.8	5363.1
52.5°	3524.3	3587.4	4076.1	4817.3	5149.6
55°	3228.1	3280.7	3800.9	4632.4	5000.7
57.5°	2957.4	2989.0	3516.7	4399.3	4677.5
60°	2691.3	2698.8	3249.1	4140.7	4406.8
62.5°	2386.1	2399.6	2974.0	3835.5	4191.8
65°	2043.3	2107.9	2677.8	3543.8	3865.6
67.5°	1723.0	1835.8	2375.6	3276.2	3444.6
70°	1380.2	1571.2	2079.4	2961.9	3080.7
72.5°	1066.0	1290.0	1775.7	2610.1	2777.0
75°	772.8	1023.9	1493.0	2294.4	2438.7
77.5°	520.2	775.8	1228.4	1945.6	2136.5
80°	311.2	566.8	992.3	1622.3	1837.3
82.5°	159.4	380.4	769.8	1360.7	1553.1
85°	69.2	240.6	581.9	1129.1	1296.0
87.5°	19.5	136.8	428.5	912.6	1054.0
90°	1.5	72.2	305.2	715.7	843.5
92.5°	1.5	34.6	215.0	541.3	639.0
95°	1.5	18.0	133.8	392.4	479.6
97.5°	1.5	10.5	81.2	278.2	351.8
100°	1.5	9.0	48.1	184.9	251.1
102.5°	1.5	10.5	33.1	117.3	163.9
105°	1.5	10.5	27.1	76.7	108.3
107.5°	3.0	10.5	24.1	57.1	75.2
110°	1.5	9.0	25.6	43.6	58.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.0	7.5	24.1	36.1	43.6
115°	1.5	6.0	21.0	34.6	36.1
117.5°	3.0	4.5	16.5	34.6	36.1
120°	3.0	3.0	13.5	33.1	37.6
122.5°	3.0	3.0	10.5	30.1	36.1
125°	1.5	3.0	9.0	22.6	31.6
127.5°	3.0	3.0	7.5	18.0	24.1
130°	3.0	3.0	6.0	13.5	18.0
132.5°	3.0	3.0	4.5	10.5	13.5
135°	3.0	3.0	3.0	7.5	10.5
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)